been unable to accept those recommendations as a whole. For the purpose of forming and maintaining a registry of teachers a separate and more or less independent council was necessary. A Bill for that purpose was introduced some time ago, which will be reintroduced to-day. It provides a council for this purpose only, some of whose members will be nominated by the Crown, some by the Universities, and ultimately it will contain members directly representative of the registered teachers themselves. But we have not seen our way to give to this council or to any other council statutory powers. We recognise, however, that the advice of educational experts may be of great value to the Board of Education. We have taken power to authorise the President of the Board of Education to appoint an educational committee to advise the Board on such matters as may be referred to it. Such a committee in all probability will be largely founded upon the registration council. In our opinion it would only tend to hamper the responsibility of a Minister if a consultative council were appointed by statute and endowed with statutory powers; in our opinion the Minister must be responsible for the choice of his advisers as well as the action which he takes upon that advice. While it is desirable, almost necessary, that the registration council should have a fixed and permanent character, we thought it desirable to reserve complete discretion to the Minister as to the choice of his advisers. I have endeavoured to explain what these Bills contain. It may appear to be a somewhat rash act to submit proposals of this character to be exposed to discussion and criticism during the long months of a comparatively unoccupied recess. It may be so, but for my part I can only say that I welcome the fullest discussion and criticism. I welcome discussion on a subject in which, in my opinion, too little interest has been hitherto felt by the general public as distinguished from professional experts, and I only trust that these proposals may receive very full discussion and criticism. I have no doubt that they will be condemned by some on account of their incompleteness; I have admitted that they are incomplete, and incomplete on a vital and essential point, but I have endeavoured to show that we have not been insensible to the importance or the urgency of that portion of the question, which we propose at present to postpone. If we have postponed it, it is because we are convinced that the constitution, preliminarily or concurrently, of a strong central authority is necessary for the equally important, perhaps more important, object—the creation of strong local authorities also. If the discussion which follows the introduction of this measure shows that we have over-rated the difficulties which I think still exist in the constitution of satisfactory local authorities, it may still be possible in another session to enlarge the scope of this Bill. But, however that may be, we may feel confident that these limited proposals, standing even alone, will be an important step in the direction of placing our national education upon a sounder and more satisfactory basis.

NOTES.

PROF. E. RAY LANKESTER has been appointed to succeed Sir William Flower as Director of the Natural History Museum at South Kensington.

THE fourth International Congress of Physiologists will assemble at Cambridge on Monday, August 22, and will hold its meetings each morning and afternoon from Tuesday, 23rd, to Friday, 26th, inclusive. The Congress has for its object the advancement of physiology by affording physiologists of various nationalities an opportunity of personally bringing forward experiments, and of exchanging and discussing their views together, and of becoming personally acquainted one with another. The languages to be recognised as official at the Congress are English, French, and German. Membership is open to (1) representatives of physiology in the persons of professors and their assistants; (2) members of physiological and similar purely scientific societies, as for example, American Physiological Society; the Physiological Society, England; Société de Biologie, Paris; Physiologische Gesellschaft, Berlin; (3) ladies and gentlemen who are proposed by a National Committee. Members will be afforded all possible facilities for experimental demonstrations, as well as for the exhibition of preparations and of scientific apparatus. In connection with the Congress there will be an exhibition of physiological apparatus. Those who attend the Congress, and all directors of physiological institutes, as well as instrument-makers recommended by the above, are invited to send exhibits. The exhibition will remain open from Monday, the 22nd, to Saturday, August 27, inclusive. A large number of British, American and Continental physiologists have notified their intention to be present. The organising Committee of the Congress is constituted as follows:—M. Foster, President; M. Blix, H. P. Bowditch, A. Dastre, P. Heger, H. Kronecker, W. Kühne, A. Mosso, W. Wedensky, with L. Fredericq, P. Grützner and C. S. Sherrington, Secretaries. Further information concerning the local arrangements for the Congress can be obtained from Dr. L. E. Shore, St. John's College, Cambridge.

THE Government of the Congo Independent State has, it is stated, just sanctioned an important measure for the advancement of scientific knowledge on the Congo. The despatch, last spring, of the expedition under Lieut. Lemaire was a commencement in this direction, but, whereas his explorations will be chiefly in the Tanganyika region, the new measure will apply to the whole of the State. Twenty posts which are to form the centres of observation, and also the bases for the collection of flora, fauna, and mineralogical specimens, have been decided upon, and are now being carefully organised under the supervision of the proper officers at Brussels. As soon as the posts are in working order, a publication will be issued at Brussels for the purpose of recording the results of these experiments. It will be issued every six weeks, under the title of "Scientific Annals."

MR. W. HARCOURT-BATH has recently returned to England with a large collection of insects obtained in the Himalayas of Sikkim and Thibet, many of which were procured at great altitudes among the snow.

A REMARKABLY fine specimen of the gigantic centipede (*Scolopendra gigas*) may be now seen in the Zoological Society's Insect House. It is not, perhaps, quite full grown, but measures about eight inches in length. It is fed principally on small mice, which it devours with alacrity. This specimen was captured in Trinidad, and forwarded to the Society by Mr. R. R. Mole, of Port-o-Spain.

THE expedition sent out to the Galapagos Islands, at the suggestion of the Hon. Walter Rothschild, last year brought home a fine series of living tortoises, which have been recently deposited in the Zoological Society's Gardens. There are in all fifty-two specimens belonging to the group of large land tortoises namely thirty-three of *Testudo vicina* from the south part of Albemarle Island, and nineteen of *Testudo ephippium* from Duncan Island. These have been placed in the old Tortoise House in the North Garden, and feed greedily on cabbages. The interesting account of the giant tortoises of the Galapagos, given by Darwin in his "Naturalists' Journal," will be in every one's recollection.

THE Committee appointed by the Board of Trade a year ago, to consider and advise upon the means of obtaining and publishing information as to opportunities for the introduction and development of British home trades in the various districts in which we have official representatives, have adopted their report. As to the means of obtaining further commercial information, it is suggested that the most economical course would be to send out experts periodically to make inquiries and to report upon the progress and the direction of trade. The Committee recommend the establishment of an office whose function it shall be to meet the constantly-increasing demand for prompt and accurate information on commercial matters, so far as it can be met by Government action. Amongst the duties of this new office would be: (1) To collect and focus existing information upon any subjects of commercial interest, whether derived from official or from unofficial sources, and whether relating to British Colonies or dependencies or to foreign countries. (2) To reply to inquiries which can be answered by a short note or by word of mouth, or by reference to published commercial data and statistics. (3) To direct inquirers who want special information to the proper quarter—*e.g.* to the Commercial Department of the Foreign Office, the office of a particular Colony, Chamber of Commerce, the Imperial Institute, and so forth. The proposed office would also bring together all the information contained in the diplomatic and Consular reports bearing upon particular industries and the state of the market for particular classes of goods. By these means it is believed that a wider knowledge of the conditions of the industries and markets abroad would be secured than exists at present.

The *Engineer* reports that on July 27 a series of experiments in aerial research were conducted in the grounds of Shaw House, near Newbury. The experiments were carried out under the direction of the Rev. J. M. Bacon, Dr. R. Lachlan, Mr. J. N. Maskelyne, and others, with the advice and assistance of Lord Kelvin, Lord Rayleigh, and other men of science. The balloon was in charge of Mr. Percival Spencer and his brother, and was filled with 40,000 cubic feet of gas. The main object of the experiments was to discover in what measure the intensity of sound is influenced by altitude, by the presence of clouds, &c. The weather proved favourable for the observations, and the ascent was successfully made at twenty minutes past five o'clock, the balloon drifting steadily in a north-westerly direction. As soon as the balloon had had a fair start the series of experiments commenced. The first experiment in acoustics was with the voice, followed by five tests with musical instruments, these being succeeded by the discharge of rifles and blasts of the siren from an engine. Then came a rifle volley, followed by a roll of musketry, succeeded in turn by discharges of cotton-powder, four ounces being used in each charge. After this came three further discharges of cotton-powder, with eight ounces in each charge. When the balloon had travelled a considerable distance there were two explosions of cotton-powder with double charges, the final experiment being a comparison between a discharge of four ounces of gunpowder and four ounces of cotton-powder. The aeronauts had with them a receiving instrument, and by noting the altitude and the sounds which reached them, took the angular distance. The balloon descended at ten minutes to seven o'clock at North Denford. All the experiments proved highly successful.

The attention of the Belfast Corporation Public Health Committee has been recently called to the fact that many cases of typhoid fever had been traced to the eating of shellfish gathered on the banks of Belfast Lough, which are saturated with sewage matter, and it was decided to call public attention to the circumstance in order that people may be apprised of the danger of eating shellfish taken from such an unsavoury locality.

The Treasurer of Guy's Hospital has received an anonymous donation of 6000 dollars from a gentleman who listened to the speech delivered by Mr. Balfour on the recent occasion of the distribution of prizes in the medical school, with the request that the Governors would use the sum for the purpose of endowment of medical research. This generous response to Mr. Balfour's appeal is most praiseworthy, and the example set by the donor will, we hope, be emulated by many other men of means acting with the same public spirit.

As has already been announced in these columns, the seventieth meeting of the Society of German Naturalists and Physicians, which is to be held at Düsseldorf in September, will be preceded by an exhibition of "historical-ethnographical medicine," to be opened immediately. The *Athenæum* states that the exhibits will include an exact reproduction of the oldest Egyptian medical papyrus—the Veterinär-papyrus of Kahun, twelfth dynasty—showing the veterinary operations of four thousand years ago. Some of the "finds" of the Imperial German Archæological Institute in Athens will be on view, which demonstrate that the original "god of the physicians" in Athens was Amynos, who was afterwards displaced from that honour, and Asklepios adopted in his stead. Dr. Sudhoff has organised a special department as a "Paracelsus Exhibition."

In connection with the meeting of the British Medical Association, the University of Edinburgh has conferred the honorary degree of LL.D. on the following medical men:—Dr. Henry Bowditch, professor of physiology, Harvard University; Sir William Broadbent, Bart., F.R.S.; Dr. Lauder Brunton, F.R.S.; Dr. E. Doyen, Paris; Dr. David Ferrier, F.R.S., professor of neurology, King's College, London; Dr. Joseph Forster, professor of hygiene, University of Strassburg; M. le Comte de Franqueville, Member of the Institute of France; Dr. Karl Gerhardt, professor of clinical medicine, University of Berlin; Mr. Jonathan Hutchinson, F.R.S.; Dr. Theodor Kocher, professor of surgery, University of Berne; Dr. August Martin, professor of gynæcology, University of Berlin; Dr. Johann Mikulicz, professor of surgery, University of Breslau; Dr. Ottavio Morisani, professor of midwifery, University of Naples; Dr. William Osler, professor of medicine, University of Baltimore; Dr. William Playfair, professor of obstetric medicine, King's College, London; Dr. Roddick, professor of surgery, University of Montreal, President of British Medical Association, 1897; Dr. Siegmund Rosentein, professor of clinical medicine, University of Leyden; Dr. Hermann Snellen, professor of ophthalmology, University of Utrecht; and Sir Richard Thorne Thorne, K.C.B., F.R.S., chief medical officer, Local Government Board, London.

Under the auspices of the Essex Field Club, a meeting of the scientific (Natural History) societies of Norfolk, Suffolk and Essex was recently held at Witham, to take steps for the establishment of an annual conference or congress of these societies. Mr. David Howard occupied the chair, and the discussion was opened by Mr. W. Cole, who read a short paper advocating such an annual assembly, and pointing out how much work might be done conjointly which would be difficult for any one society to accomplish alone. He also advocated, as a possible result of such conferences, the publication of one really good natural history journal for the whole of the "East Anglian" societies. Prof. Meldola, Mr. J. Southwell (Norfolk), Mr. H. Miller (Suffolk), Mr. W. Whitaker, Dr. Vincent (Suffolk), Prof. Boulger (Essex), Mr. J. C. Shenstone (Essex), and the Chairman, strongly supported the proposal. A resolution was unanimously passed that, in the opinion of the meeting, the establishment of an annual congress of the East Anglian societies was much to be desired, and that steps be taken to form a Committee to promote such a congress next year. The large meeting subsequently visited, under the leadership of Prof. Boulger and the Rev. A. Shears, Black Notley, Ray's birth-place and burial-place, and his home at "Dewlands" for twenty years preceding his death. The party was afterwards entertained by the Mayor of Colchester at his beautiful seat at Stisted.

The report of Dr. T. Oliver, of Newcastle, on a visit of inspection made by him to three French match manufactories, has just been issued as a Parliamentary paper. The report gives particulars as to the works themselves, the number of workpeople employed, the kinds of matches made, an account of the health of those engaged, the precautions taken to guard against sickness, and regulations as to those who are sick, and concludes with the following impressions and deductions: (1) Until recently the match-makers in certain of the French factories suffered severely from phosphorus poisoning; that at the present time there is apparently a reduction in the severer forms of the illness. (2) That the reduction in the amount of illness is attributable to greater care exercised in the selection of the workpeople; raising the age of their admission into the factory; medical examination on entrance; subsequent close supervision; repeated dental examination; personal cleanliness on the part of the workers; early suspension on the appearance of symptoms of ill-health; improved methods of manufacture. (3) That the French Government, aware of the dangers of match-making, is furthering by all possible means new methods of manufacture, and, with this object in view, retains in its service chemists and inventors who are continually making experiments. (4) That the Government has to some extent already succeeded in manufacturing a match capable of striking anywhere, yet free from white phosphorus, but that until now the manufacture of this match is not an industry.

PARTICULARS are given in the *Times* as to a process employed for making wood incombustible, or at any rate incapable of sustaining and conveying flame. The process may be said roughly to consist of removing the natural juices of the wood and replacing them with certain substances which not only make it fireproof, but also have antiseptic properties that prevent decay. The operation is effected in retorts or cylinders. The wood having been run in on trollies, the air-tight door is closed and the contents subjected to heat and the action of a high vacuum. This treatment is continued till the volatile and fermentable constituents have been withdrawn, the time required to attain this result varying with the character of the wood. The next step is to fill the cylinder with the fireproofing solution, the exact composition of which is kept secret, and force it into the wood under hydraulic pressure, the amount of which again differs for different woods, but may reach 150 lb. to the square inch or more. When thoroughly impregnated with the salts the timber is taken out of the cylinders, restacked on the trollies, and put into the drying-kiln—a room through which hot air is continually circulated by powerful fans, and which is fitted with apparatus to condense the vapours given off by the wood. Here it remains till it is thoroughly dried—in the case of a load of average thickness about a month. It is then ready for delivery and use.

WE are glad to learn that efforts are being made to secure for the Maidstone Museum and Public Library the collection of prehistoric flint implements formed during the past thirty-four years by Mr. Benjamin Harrison, and illustrating important periods in the early history of man in Great Britain and elsewhere. It is proposed to select from the specimens in Mr. Harrison's collection the type series chosen from the chalk plateau implements by Sir Joseph Prestwich to illustrate his monographs upon the subject of plateau or eolithic implements, and other type implements which have been figured and described by other writers; a series to show variety of form and the probable uses to which these implements have been put; a collection of paleolithic implements from gravels in the West Kent district; and type series of neolithic implements found in Kent. No more suitable home could be found for these implements than the Maidstone Museum, situated as it is in the county town, and also in the immediate vicinity of the district in which they were discovered. An appeal for subscriptions to purchase the collection, signed by the Mayor of Maidstone, has been issued by the Museum Committee. The public spirit of the municipality in the cause of science, as shown by the efforts being made to acquire Mr. Harrison's collection, is as gratifying as it is rare. Nearly 100*l.* have been raised so far, and there should be no difficulty in increasing this to the amount required. Subscriptions may be sent to the Town Clerk of Maidstone, or to the Harrison Collection Fund, Kentish Bank, Maidstone.

IN the U.S. *Weather Review* or March, Mr. R. de C. Ward describes an interesting formation of small cumulus clouds over a fire, observed by him at the Harvard College Observatory at Arequipa, Peru. Behind the western flank of Mount Charchani, and about fifteen miles away, a column of smoke was rising from a considerable fire of brushwood, at a probable height of about 14,000 feet above sea-level. While looking at the smoke he noticed the formation of a small cumulus cloud directly over it, and from 3000 to 4000 feet above it, the sky being almost clear and the wind nearly calm at the time. The cloud soon disappeared, and was succeeded by another, which again disappeared within five minutes. Eight distinct cloudlets were seen thus to form and dissolve within the space of half an hour, at the end of which time the smoke had disappeared. Although the smoke column was small, the conditions were evidently favourable for cloud formation. Cumulus clouds over fires were described by Espy in his Fourth Meteorological Report; another case was also noted by Mr. Ward in *Science* of January 8, 1897.

AN interesting installation of electric transmission of water power has, says *Engineering*, recently been completed by the utilisation of the River Etsch for the benefit of the towns of Bozen and Meran. The sources of the Etsch are at a great height above the Reschen lake, which is situated some 5200 feet above the level of the sea. At the place where the installation in question has been erected, the fall of the river is 630 feet over a distance of about a mile and a half. So far 6000 horse-power have been utilised, and a similar quantity can be made available at the second fall. The power will be used for electric light, at an extremely cheap rate for industrial purposes, probably electric railways, &c. The course into which the water is conveyed has a length of about 1000 feet; a tunnel has been made through the rocks of 1730 feet in length, and at the end of this is a reservoir, with a capacity of 1335 cubic metres. From here the power conduit, 12 feet in diameter, has been blasted almost vertically in the rock; it ends in a chamber, from whence two steel tubes, about 5 feet in diameter, lead to the turbines. The tubes are for a length of 110 feet inserted in the rock and laid in concrete. From each tube three outlets lead the water to turbines, which are after the Portial Girard system, and of 1000 horse-power each at 320 revolutions, the consumption of water being 1·4 cubic metre per second, with a utilised fall of about 230 feet. The dynamos are direct-coupled with the turbines, and generate currents of 10,000 and 3600 volts. The connection with Bozen has a length of twenty-two miles, and the one to Meran of three miles. They are overhead, supported by 33-feet high poles, and with a tension of respectively 10,000 and 3600 volts. On entering Meran the current is conveyed through two cables to the distributing station, from whence it, by means of underground high-tension network, is conveyed to the transformers and reduced to 115 volts. The same is the case at Bozen, where the current, however, first is reduced from 10,000 to 3600 volts.

THE formulæ relating to recurring series have long been studied, but there has always been a certain incompleteness about their synthetic treatment. This want is now to a certain extent supplied by a paper, communicated by Dr. Carlo Pietracola to the *Atti* of the Naples Academy, of which a brief abstract appears in their *Rendiconto*. Dr. Pietracola deals with the part of the theory regarding the formal relations between the general terms of recurring series and the elements which define them. This subject he treats by a new method, involving a generalisation of the isobaric algorithm, and a number of interesting applications form a noteworthy feature of the paper.

A METHOD of determining simultaneously the electric and thermic conductivities of metals at different temperatures is described by Signor Paolo Straneo in the *Atti dei Lincei*, vii. 11. The principal object of the experiments was to ascertain how the thermic conductivity of a substance varied with the temperature. As regards the internal conductivity, the variations were found to be too small to be determinable to a sufficient degree of precision by existing methods. The coefficient of surface conductivity increases with the temperature, and the dispersivity not only increases with the absolute temperature, like the coefficient of specific heat, but is at least a quadratic function of the difference of temperature between the body and the surrounding air.

THE so-called chromatolysis, supposed by Cavara to exist normally in the nuclei of plants, is discussed in the *Atti dei Lincei* by Dr. B. Longo, who enunciates the following conclusions: (1) The phenonomen of chromatolysis does not exist in the normal vegetable nucleus; (2) the nucleoli consist of one unique substance, and not of a central one representing the nucleolus proper of Cavara, and a peripheric one representing the chromatin; (3) the nucleolus proper of Cavara is nothing but a vacuole; (4) the nucleoli are either perfectly homogeneous or vacuolate, but never alveolate; (5) in the present state of science we are ignorant of the true function of nucleoli.

PROF. G. MERCALLI has recently prepared an important memoir on the earthquakes of southern Calabria and the district around Messina (*Mem. della Soc. Ital. delle Scienze*, ser. iii. vol. xi.). The first part contains a catalogue of all the shocks felt in this region from 1169 to the present day. In the second, a special study is made of the more important seismic series, and especially of that which commenced on February 5, 1783. Of this series alone (1783-86), the author adds notices of about 500 shocks to the 1186 already chronicled by Vivenzio and Pignatari. The most interesting part is, perhaps, the third, which deals with the recent series of earthquakes beginning on November 16, 1894, the origin of which Prof. Mercalli traces to two centres, one in the sea of Palmi, the other beneath the western slope of Aspromonte, between S. Cristina and Delianova. Among the general conclusions formulated are the following:—The Calabro-Messinese earthquakes, as a rule, occur in long series. The great destruction caused by those of 1783 was due not only to the violence of the shocks, but especially to their long duration (two minutes and more), and to the nature of the surface rock-formations. All the great earthquakes of the district are independent of the volcanic foci of Etna and the Aeolian islands, there being about eighteen different seismic centres. With regard to the causes of the earthquakes, the author considers tectonic dislocations insufficient, and would prefer either masses of water passing instantaneously into the state of vapour, laccolitic or plutonic displacements and injections, or subterranean rock-falls. On account of their position and supposed origin, he proposes to apply the term *inter-volcanic* to the Calabro-Messinese earthquakes.

THE Report of Mr. J. C. Willis, director of the Royal Botanic Gardens, Ceylon, on the condition of the Gardens, and the work accomplished during 1897, records a number of interesting points. The appointment of Mr. E. Ernest Green as Honorary Government Entomologist is noteworthy. As to the work of the Gardens, a fair amount of ground was laid out during the year in experimental plots of economic plants, chiefly at Peradeniya. An attempt was made to bring the department more into touch with the public by issuing periodical circulars dealing with horticultural, agricultural, and botanical subjects. Each circular deals with one subject only. Three were published during the latte half of 1897, one being introductory, the others dealing with the cacao disease. Copies are sent free to all Government officers, to planters' associations and similar bodies, and to botanic gardens and similar institutions abroad. Much attention was given during the year to the cacao canker. During the early part of the year an extended investigation of the diseased areas was made, and the disease was found to be common in nearly all parts of the Central and Uva Provinces. The disease was found to be due to the attack of a fungus, whose exact nature is at present unknown, but which almost certainly belongs to the class of fungi which cause the various cankers of stems and roots. The interest taken in the cultivation of Para rubber received a very great impetus during the year, and the demand for seed was enormously larger than the supply. The total crop of seeds from mature trees in the Gardens was rather over 100,000 seeds, of which 88,500 were sold to planters in Ceylon. The cultivation of camphor trees is also full of promise. It is reported that camphor plants continue to grow well at Hakgala, some of them being nine feet high. Of the plants distributed in 1895, some of those in Galle District have grown to a height of twelve feet. In the laboratory attached to the museum, researches were carried on during 1897 by several European investigators. The work of the Gardens has thus been for the advancement of pure as well as economic botany.

A LARGE amount of work is being done in the various American botanical laboratories on the embryology of flowering plants, and interesting results have in several cases been obtained. Among the more recent contributions are one on the Pontederiaceæ (*Pontederia* and *Eichchornia*), by Wilson R. Smith; the results being very similar to those with other Monocotyledons of a low type, such as *Naias* and *Zannichellia;* and one on *Euphorbic corollata*, by Florence May Lyon. The embryo of this plant is characterised by the extremely long synergids, and the very temporary character of the antipodals. The work was in both instances done in the Hull Botanical Laboratory. We have also received Part i. o. the second series of the Minnesota Botanical Studies; and three publications from the U.S. Department of Agriculture: a Preliminary Report of the Soils of Florida, by Milton Whitney; and Nutrition Investigations at the University of Tennessee and in Pittsburg respectively, by Dr. Charles E Wait and Prof. Isabel Bevier

THE special correspondent of the *Lancet* in Calcutta writes: "A very diplomatic compromise between what ought to be done and the wishes and prejudices of the natives has been effected in Calcutta by the establishment of licensed family hospitals for plague cases. The sanitary measures hitherto adopted elsewhere are not adapted to the Indian people, and consequently the regulations about plague have been evaded in every possible way. The establishment of this system, therefore, has gained the confidence of the people. Besides the public hospitals and the ward hospitals there are numerous private hospitals, so that all the communities are now well provided for. In addition to this, houses possessing anything like suitable accommodation for the isolation of a case of plague are allowed to have one or more rooms set apart for the purpose. By these concessions every case of plague ought to come under observation. The plague scare has greatly subsided, and inoculation is coming slowly into favour among all classes."

THE current number of the *Journal* of the Society of Arts contains the first of Dr. D. Morris's Cantor lectures on "Sources of Commercial India-rubber."

WE learn from the *Kew Bulletin* that a Flora of Simla and the surrounding district is being prepared by Sir Henry Collett, and is expected to comprise about 1500 species of flowering plants. The illustrations are contributed by Miss Smith.

JUDGING from the Report for 1896-97, which has just reached us, the Felsted School Scientific Society is doing good work by creating an interest in science among the members of the rising generation. During the session under review a number of interesting papers and lectures were delivered, among the number being a lecture by Mr. George Murray, F.R.S., on "A Journey to the Tropics," and a paper by Mr. C. Hose, Resident of Baram, Sarawak, entitled "A Visit to Celebes."

SURGEON-GENERAL STERNBERG, of the U.S. Army, contributes an article on "The Sanitary Regeneration of Havana" to the August number of the *Century Magazine*, which should be read by all who take an interest in sanitary matters. The writer of the article considers it practicable to put the city of Havana in such a sanitary condition that it would be exempt from its ever-recurring scourge of yellow fever, but that the undertaking would be of considerable magnitude, involve the expenditure of large sums of money, and require much time for its accomplishment.

THE additions to the Zoological Society's Gardens during the past week include a Pig-tailed Monkey (*Macacus nemestrius*, ♀) from Java, presented by Mr. C. R. Johnson; two Squirrel Monkeys (*Chrysothrix sciurea*) from Guiana, presented by Mr. C. E. Günther; a Common Rat Kangaroo (*Potorous tridactylus*, ♂) from Australia, presented by Major Fleming; a White-crested Jay Thrush (*Garrulax leucolophus*), a White-throated Jay Thrush (*Garrulax albogularis*) from India, presented by Mr. Henry Fulljames; a Rook (*Corvus frugilegus*), British, presented by Mr. Mack; a Leopard Tortoise (*Testudo pardalis*), a Bell's Cinixys (*Cinixys belliana*), a Home's Cinixys (*Cinixys homeana*) from Kavitando, near Victoria Nyanza, presented by Captain E. M. Woodward; a Common Chamæleon (*Chamæleon vulgaris*) from North Africa, presented by Mr. W. Cooper; a Humboldt's Saki (*Pithecia monachus*) from the Amazons; a Vinaceous Amazon (*Chrysotis vinacea*) from Brazil, an Orange-winged Amazon (*Chrysotis amazonica*) from South America, a Festive Amazon (*Chrysotis festiva*) from Guiana; five Gazelles (*Gazella dorcas*) from North Africa, two Magpies (*Pica caudata*), British, deposited; four Cambayan Turtle Doves (*Turtur senegalensis*), a Spotted Pigeon (*Columba maculosa*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

AUGUST METEORS.—In consequence of the brightness of the moon during the earlier portion of this month, only the more brilliant members of the Perseid swarm of meteors are likely to be observed. These meteors originate, as their name indicates, from a point situated in the constellation of Perseus near the star η, which lies in the north-eastern part of the heavens, and is rather low down during the earlier portion of the evening. As the maximum is usually attained on the 10th of the month, the moon should not prove such a disturbing factor; and if the night be fine, observers should make a point of recording their observations in a manner which has been described by Mr. Denning. It is only in this way that observations can be properly discussed and made to serve a useful end. Mr. Denning has recently (*Knowledge*, August 1) published an ephemeris of the position of the radiant point, and below we give an abstract which may prove useful for the present return.

August.	R.A.	Decln.	August.	R.A.	Dec'n.
4	38	+56	10	45	+57
5	39	56	11	46	57
6	40	56	12	47	57
7	41	57	13	49	58
8	42	57	14	50	58
9	44	+57	15	51	+58

We may mention again that the maximum occurs on the night of the 10th.

WOLF'S COMET.—This comet is gradually decreasing its northern declination, but is increasing slowly in brightness. Its ephemeris for the present week is as follows (*Astr. Nach.*, 3506):—

12h. Berlin M.T.

1898.	R.A. h. m. s.	Decl. ° ′	Br.
August 4	4 37 7	+17 45	2·4
5	39 48	36·8	
6	42 28	27·7	2·4
7	45 7	18·3	
8	47 46	8·7	2·4
9	50 23	16 58·8	
10	52 59	48·8	2·4
11	55 34	38·4	
12	4 58 8	+16 27·9	2·4

Between the above dates, the sun's apparent right ascension at apparent noon lies between 8h. 58m. and 9h. 29m. G.M.T.

THE VARIABLE *o* CETI.—This variable star has always afforded plenty of interest to the observer, and according to the most recent observations much attention must still be paid until we are able to understand all the intricacies which are connected with it. In the current number of the *Astr. Nachr.* (3506) Herr W. Stratonoff gives a short account of his observations, which extend over the years 1896–98 ending January 24, and these show that there are peculiarities which need further study. According to these observations the maximum (3·60 mag.) in 1897 occurred about January 5, which indicated that the time of computed maximum was about sixty-three days too early. The following maximum in 1897 took place on about November 23, the magnitude of the star amounting to less than on the former occasion, namely 3·06. This maximum occurred fourteen days later than the calculated time. The interval between the two amounts to 322 days, which is smaller by nine days than what is generally computed to this star. Herr Stratonoff further points out that after the chief maximum a secondary maximum occurs, twenty-seven days later; this is very interesting, as such a maximum takes place in the well-known variable η Aquilæ. Herr Stratonoff's observations were all made with the naked eye, with the exception of those included in October 22–25, when he used an opera-glass. He attempted, by photographic means, to determine the variations of the star by making equal exposures on different nights, and examining the diameters of the images formed; but he ultimately found that the method was not so accurate as the one, namely Argelander's, that he had employed.

In the same number of the *Astr. Nachr.* Dr. A. A. Nijland communicates a short paper on the same variable, and shows that, according to his observations, the maximum in 1897 occurred sharply on November 26. This determination may be perhaps considered more accurate than that of Herr Stratonoff, whose observations at the time of maximum were less numerous than those of Dr. Nijland. Even in this case the computed time was far too early, amounting to fifty-seven days. In Dr. Nijland's curve the secondary maximum of Herr Stratonoff is also indicated, although the former observer draws his curve through the mean of the observed points, looking upon the variation of intensity as within errors of observation. Assuming that the maximum fell according to Chandler, on January 11, 1897, then the last observed period amounts to about 319 days, which does not differ very much from that found by Herr Stratonoff, as mentioned above. The light curves reproduced in both the papers referred to are well worth perusal, and will perhaps lead other observers to follow the fluctuations of this interesting variable.